

A. Kobelik

1638

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/545,072A

DATE: 12/08/2000
TIME: 10:03:32

Input Set : A:\ES.txt
Output Set: N:\CRF3\12082000\I545072A.raw

RECEIVED
DEC 21 2000
TECH CENTER
ENTERED
1600/2900

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4 <110> APPLICANT: Yu Lin
5      Lin Sun
6      Long V. Nguyen
7      Howard M. Goodman
9 <120> TITLE OF INVENTION: MODIFICATION OF PLANT STORAGE RESERVES
12 <130> FILE REFERENCE: 00786/368002
14 <140> CURRENT APPLICATION NUMBER: US 09/545,072A
15 <141> CURRENT FILING DATE: 2000-04-07
17 <150> PRIOR APPLICATION NUMBER: 60/128,651
18 <151> PRIOR FILING DATE: 1999-04-08
20 <160> NUMBER OF SEQ ID NOS: 9
22 <170> SOFTWARE: FastSEQ for Windows Version 4.0
24 <210> SEQ ID NO: 1
25 <211> LENGTH: 1483
26 <212> TYPE: DNA
27 <213> ORGANISM: Arabidopsis thaliana
29 <400> SEQUENCE: 1
30 attgcaacca ggaagagaaa gaaaatcaga gattgattta acgtgaatgg aattttgttg      60
31 ttcccacaaat tcttctgaga aatagcaaaag ttcagttttg tttctctcta tctgaagctc      120
32 aatgggaagct tataagcaat ggggttgag aatagagag tatgtacaat cctttggatc      180
33 ctttgccaac ggattgacat ggtgcttcc tgaagaagtt tctgcttcag agattggacc      240
34 agaagcagta acggttttt tgggcataatt cacaacgata aatgaacaca taattgaaaa      300
35 tgcctccaa caactcgtggc atgttggttc ttcgggaat gatccatccc tttcttatcc      360
36 actactcacc gccatcccca aggatttggg aactgttgg gaagtggcag ctgaacactt      420
37 ctatggagac aaaaaatgga actacattat tctcactgaa gctatgaagg ctgtcattag      480
38 gttagccttg ttcgggaata gtgggtataa gatgcttctt caaggagggg aaacacctaa      540
39 tgaggagaaa gattcctaacc aatccgagtc gcaaaaataga gctggtaatt cgggtagaaa      600
40 tctcgggccc catggtcttg gaaacaaaaa tcatcataat ccatggaaet tgggaaggacg      660
41 ggcgatgtct gctttaagtt catttggtca gaatgcaaga acaacaacat cttctacccc      720
42 cggttggtct cgaagaattc aacatcagca agcagttata ggcctccaa tgaatcaagg      780
43 gaagcgaaga acgatgtccg agctactlac tgagaagyyt gttaatggag cgttgtttgc      840
44 gattggtgag gttctttaca taacgagacc gctcatttac gttcttttca tcaaaaaata      900
45 tggagtcgga tcttggtatc ctltgggtat atcgelttct gtggacacac tggggatggg      960
46 tcttcttgca aattcgaagt ggtggggaga gaagagcaag caagtccatt tctcaggacc      1020
47 tgaaaaggat gagctgagga gacgaaaact gatatgggca ttgtacctca tgagagatcc      1080
48 attcttcaac aagtacacaa ggcagaagct ggaaagctct caaaagaagc tggaaclaat      1140
49 tccattgacc ggattcctca cagagaagat tgtggagctt ttggaggag ctcagtcacg      1200
50 gtacacttac atatcgggat cgtgaggtta agcgttttac ttatggttta tatgcaacgg      1260
51 aagaatattg ccattgttgg aatgcttttt tagatcatca aaggctccta cagatttctt      1320
52 agggaaatgg ttcaggcttt tgtttagaaat tgtgtttatt gcaacaggta gagaacataa      1380
53 ccatagacag atgtatctga agagataaac ttctctatgt ctaagaaat ggaccgatac      1440
54 gaataaaaca agcatcatla aagattaaaa aaaaaaaaaa aa      1483
56 <210> SEQ ID NO: 2
57 <211> LENGTH: 367
58 <212> TYPE: PRT
59 <213> ORGANISM: Arabidopsis thaliana
61 <400> SEQUENCE: 2
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62 Met Glu Ala Tyr Lys Gln Trp Val Trp Arg Asn Arg Glu Tyr Val Gln
63 1 5 10 15
64 Ser Phe Gly Ser Phe Ala Asn Gly Leu Thr Trp Leu Leu Pro Glu Lys
65 20 25 30
66 Phe Ser Ala Ser Glu Ile Gly Pro Glu Ala Val Thr Ala Phe Leu Gly
67 35 40 45
68 Ile Phe Thr Thr Ile Asn Glu His Ile Ile Glu Asn Ala Pro Thr Pro
69 50 55 60
70 Arg Gly His Val Gly Ser Ser Gly Asn Asp Pro Ser Leu Ser Tyr Pro
71 65 70 75 80
72 Leu Leu Ile Ala Ile Leu Lys Asp Leu Glu Thr Val Val Glu Val Ala
73 85 90 95
74 Ala Glu His Phe Tyr Gly Asp Lys Lys Trp Asn Tyr Ile Ile Leu Thr
75 100 105 110
76 Glu Ala Met Lys Ala Val Ile Arg Leu Ala Leu Phe Arg Asn Ser Gly
77 115 120 125
78 Tyr Lys Met Leu Leu Gln Gly Gly Glu Thr Pro Asn Glu Glu Lys Asp
79 130 135 140
80 Ser Asn Gln Ser Glu Ser Gln Asn Arg Ala Gly Asn Ser Gly Arg Asn
81 145 150 155 160
82 Leu Gly Pro His Gly Leu Gly Asn Gln Asn His His Asn Pro Trp Asn
83 165 170 175
84 Leu Glu Gly Arg Ala Met Ser Ala Leu Ser Ser Phe Gly Gln Asn Ala
85 180 185 190
86 Arg Thr Thr Thr Ser Ser Thr Pro Gly Trp Ser Arg Arg Ile Gln His
87 195 200 205
88 Gln Gln Ala Val Ile Glu Pro Pro Met Ile Lys Glu Arg Arg Arg Thr
89 210 215 220
90 Met Ser Glu Leu Leu Thr Glu Lys Gly Val Asn Gly Ala Leu Phe Ala
91 225 230 235 240
92 Ile Gly Glu Val Leu Tyr Ile Thr Arg Pro Leu Ile Tyr Val Leu Phe
93 245 250 255
94 Ile Arg Lys Tyr Gly Val Arg Ser Trp Ile Pro Trp Ala Ile Ser Leu
95 260 265 270
96 Ser Val Asp Thr Leu Gly Met Gly Leu Leu Ala Asn Ser Lys Trp Trp
97 275 280 285
98 Gly Glu Lys Ser Lys Gln Val His Phe Ser Gly Pro Glu Lys Asp Glu
99 290 295 300
100 Leu Arg Arg Arg Lys Leu Ile Trp Ala Leu Tyr Leu Met Arg Asp Pro
101 305 310 315 320
102 Phe Phe Thr Lys Tyr Thr Arg Gln Lys Leu Glu Ser Ser Gln Lys Lys
103 325 330 335
104 Leu Glu Leu Ile Pro Leu Ile Gly Phe Leu Thr Glu Lys Ile Val Glu
105 340 345 350
106 Leu Leu Glu Gly Ala Gln Ser Arg Tyr Thr Tyr Ile Ser Gly Ser
107 355 360 365
110 <210> SEQ ID NO: 3
111 <211> LENGTH: 21
112 <212> TYPE: DNA

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113 <213> ORGANISM: Artificial Sequence
115 <220> FEATURE:
116 <223> OTHER INFORMATION: Primer
118 <400> SEQUENCE: 3
119 atcagagatt gatttaacgt a
121 <210> SEQ ID NO: 4
122 <211> LENGTH: 21
123 <212> TYPE: DNA
124 <213> ORGANISM: Artificial Sequence
126 <220> FEATURE:
127 <223> OTHER INFORMATION: Primer
129 <400> SEQUENCE: 4
130 acgattttca attatgtgtt c
132 <210> SEQ ID NO: 5
133 <211> LENGTH: 19
134 <212> TYPE: DNA
135 <213> ORGANISM: Artificial Sequence
137 <220> FEATURE:
138 <223> OTHER INFORMATION: Primer
140 <400> SEQUENCE: 5
141 cgcttggtcg gtcatttcg
143 <210> SEQ ID NO: 6
144 <211> LENGTH: 391
145 <212> TYPE: PRT
146 <213> ORGANISM: Yarrowia lipolytica
148 <400> SEQUENCE: 6
149 Met Thr Asp Lys Leu Val Lys Val Met Gln Lys Lys Lys Ser Ala Pro
150 1 5 10 15
151 Gln Thr Trp Leu Asp Ser Tyr Asp Lys Phe Leu Val Arg Asn Ala Ala
152 20 25 30
153 Ser Ile Gly Ser Ile Glu Ser Thr Leu Arg Thr Val Ser Tyr Val Leu
154 35 40 45
155 Pro Gly Arg Phe Asn Asp Val Glu Ile Ala Thr Glu Thr Leu Tyr Ala
156 50 55 60
157 Val Leu Asn Val Leu Gly Leu Tyr His Asp Thr Ile Ile Ala Arg Ala
158 65 70 75 80
159 Val Ala Ala Ser Pro Asn Ala Ala Ala Val Tyr Arg Pro Ser Pro His
160 85 90 95
161 Asn Arg Tyr Thr Asp Trp Phe Ile Lys Asn Arg Lys Gly Tyr Lys Tyr
162 100 105 110
163 Ala Ser Arg Ala Val Thr Phe Val Lys Phe Gly Glu Leu Val Ala Glu
164 115 120 125
165 Met Val Ala Lys Lys Asn Gly Gly Glu Met Ala Arg Trp Lys Cys Ile
166 130 135 140
167 Ile Gly Ile Glu Gly Ile Lys Ala Gly Leu Arg Ile Tyr Met Leu Gly
168 145 150 155 160
169 Ser Thr Leu Tyr Gln Pro Leu Cys Thr Thr Pro Tyr Pro Asp Arg Glu
170 165 170 175
171 Val Thr Gly Glu Leu Leu Glu Thr Ile Cys Arg Asp Glu Gly Glu Leu

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172          180          185          190
173 Asp Ile Glu Lys Gly Leu Met Asp Pro Gln Trp Lys Met Pro Arg Thr
174          195          200          205
175 Gly Arg Thr Ile Pro Glu Ile Ala Pro Thr Asn Val Glu Gly Tyr Leu
176          210          215          220
177 Leu Thr Lys Val Leu Arg Ser Glu Asp Val Asp Arg Pro Tyr Asn Leu
178 225          230          235          240
179 Leu Ser Arg Leu Asp Asn Trp Gly Val Val Ala Glu Leu Leu Ser Ile
180          245          250          255
181 Leu Arg Pro Leu Ile Tyr Ala Cys Leu Leu Phe Arg Gln His Val Asn
182          260          265          270
183 Lys Thr Val Pro Ala Ser Thr Lys Ser Lys Phe Pro Phe Leu Asn Ser
184          275          280          285
185 Pro Trp Ala Pro Trp Ile Ile Gly Leu Val Ile Glu Ala Leu Ser Arg
186          290          295          300
187 Lys Met Met Gly Ser Trp Leu Leu Arg Gln Arg Gln Ser Gly Lys Thr
188 305          310          315          320
189 Pro Thr Ala Leu Asp Gln Met Glu Val Lys Gly Arg Thr Asn Leu Leu
190          325          330          335
191 Gly Trp Trp Leu Phe Arg Gly Glu Phe Tyr Gln Ala Tyr Thr Arg Pro
192          340          345          350
193 Leu Leu Tyr Ser Ile Val Ala Arg Leu Glu Lys Ile Pro Gly Leu Gly
194          355          360          365
195 Leu Phe Gly Ala Leu Ile Ser Asp Tyr Leu Tyr Leu Phe Asp Arg Tyr
196          370          375          380
197 Tyr Phe Thr Ala Ser Thr Leu
198 385          390
201 <210> SEQ ID NO: 7
202 <211> LENGTH: 19
203 <212> TYPE: DNA
204 <213> ORGANISM: Artificial Sequence
206 <220> FEATURE:
207 <223> OTHER INFORMATION: Primer
209 <400> SEQUENCE: 7
210 ggcaatatlc ttccgttgc
212 <210> SEQ ID NO: 8
213 <211> LENGTH: 23
214 <212> TYPE: DNA
215 <213> ORGANISM: Artificial Sequence
217 <220> FEATURE:
218 <223> OTHER INFORMATION: Primer
220 <400> SEQUENCE: 8
221 aaaaatggaa ctacattatt ctc
223 <210> SEQ ID NO: 9
224 <211> LENGTH: 22
225 <212> TYPE: DNA
226 <213> ORGANISM: Artificial Sequence
228 <220> FEATURE:
229 <223> OTHER INFORMATION: Primer

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231 <221> NAME/KEY: variation
232 <222> LOCATION: (1)...(22)
233 <223> OTHER INFORMATION: Where h is a, c, or t/u; not g.
235 <400> SEQUENCE: 9
236 ataagtaaaa cgcttaacct hc

RECEIVED
DEC 21 2000
TECH CENTER 1600/2900
22

VERIFICATION SUMMARY DATE: 12/08/2000
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